STRUCTURE CONNECTION OF MOTION CHAIR

Field of the Invention

The present invention relates to a structure connection of motion chair, and more particularly, to a chairback connection structure that can be easily dismantled and assembled.

Background of the Invention

Generally, for the sake of delivery convenience, a product is commonly expected with the best possibility to be dismantled into several parts beforehand, those parts are assembled after arriving the destination, thereby reducing the space occupied by the product while being conveyed, thus saving the delivery cost. For a chair product, particularly for the chair with the functions of foot raising and inclining, such as a massage chair, a lounger or a sofa, etc., separating the chairback from the chair base is the major method for greatly reducing the product space in convey. On the other hand, since the DIY (Do It Yourself) market has been more and more popular with consumers, the function of rapidly and briefly dismantling and assembling a product has become one of the important factors determining the product competition. Often, the consumers need to separate the chairback from the chair base so as to perform certain necessary maintenance work. Hence, how to rapidly and briefly dismantle and assemble the chairback and the chair base is quite an important topic for the chair industry.

Referring to Fig. 1, Fig. 1 is an explosive view showing a conventional structure

connection of motion chair. The structure connection shown in Fig. 1 is disclosed in U.S. Patent application publication number 2003/0094844A1, wherein the structure connection is composed of retaining spring plates 130, fixed receiving frames 140 and rear inclining bars 120. The retaining spring plates 130 are located on the top of the fixed receiving frames 140, and there are hooked portions (not shown) inside the retaining spring plates 130, and there are openings 132 located on the exterior of the retaining spring plates 130. The rear inclining bars 120 are installed on a chair base 110 (such as a chair base having a foot-raising mechanism), and have retaining portions 122 located thereon. When a chairback 100 is assembled with the chair base 110, the rear inclining bars 120 are respectively inserted into the fixed receiving frames 140, and moved towards the retaining spring plates 130 until the hooked portions inside the retaining spring plates 130 are engaged with the retaining portions 122 located on the rear inclining bars 120, whereby the chairback 100 is combined with the chair base 110. When the chairback is dismantled, the retaining spring plates 130 are moved outwards via the openings 132, so as to make the hooked portions inside the retaining spring plates 130 off the retaining portions 122 located on the rear inclining bars 120. Thereafter, the chairback 100 and the chair base 110 can be separated by pulling upwards the chairback 100.

However, the aforementioned conventional technology relies on the elasticity of the retaining spring plates 130 and the engagement of the retaining spring plates 130 and the retaining portions 122, to connect the chairback 100 to the chair base 110, and then the rear inclining bars 120 are secured by the structure of the fixed receiving frames 140, so that the life of the fixed receiving frames 140 are frequently shortened due to the elastic fatigue thereof. Moreover, the structure of the fixed receiving frames 140 is quite complicated and the fabrication cost thereof is high. After several

times of usage, the fixed receiving frames 140 are easily to be deformed and cannot be used any more. On the other hand, with the application of the conventional technology, the chairback 100 has to be lifted upwards for quite a distance while being assembled with the chair base 110, and thus the assembly of the chairback 100 and the chair base 110 cannot be completed smoothly until the fixed receiving frames 140 are aligned to the rear inclining bars 120. Since the chair having the functions of foot raising and inclining is quite heavy in weight and large in size, it is already not easy to lift the entire chairback upwards for a certain distance, and the additional work of aligning the fixed receiving frames 140 to the rear inclining bars 120 further increase the difficulty level of the conventional technology assembling the chairback 100 and the chair base 110.

Hence, there is a need to develop a structure connection of motion chair for lowering the difficulty level of dismantling and assembling the chairback and the chair base; for providing a robust and brief structural design to prolong the usage life of the structure connection and reduce the fabrication cost, thereby overcoming the disadvantage of the conventional structure connection of motion chair.

Summary of the Invention

It is a main object of the present invention to provide a structure connection of motion chair for using the engagement of the concaved portions of the supporting plates and supporting members to lower the difficulty level of assembling the chairback and the chair base; to provide a robust and brief structural design for prolonging the usage life of the structure connection and reduce the fabrication cost.

According to the aforementioned object, the present invention provides a structure connection of motion chair used for connecting a chairback to a chair base.

According to a preferred embodiment of the present invention, the structure

connection of motion chair comprises: a pair of first supporting members respectively installed on both sides of the chairback, a pair of second supporting members respectively installed on both sides of the chairback, and a pair of supporting plates respectively installed on both sides of the chair base, wherein the first supporting members are located on the positions near the chair base, and the second supporting members are located below the first supporting members, and the supporting plates are respectively corresponding to and engaged with the first supporting members and the second supporting members.

Further, each of the supporting plates comprises: a first supporting plate component and a second supporting plate component connected to the first supporting plate component, wherein the first supporting plate component has at least one locking hole for being fixed to the chair base. There is an angle between a first side of the second supporting plate component and the first supporting plate component, wherein the angle is greater than 0 degrees and smaller than 180 degrees. Further, the second supporting plate component has a first concaved portion and a second concaved portion, wherein the first concaved portion is located on one end opposite to a connection side between the first supporting plate component and the second supporting plate component, and the first concaved portion is used for supporting the first supporting member. The second concaved portion is located on the position of a second side near the connection side, wherein the second side is opposite to the first side, and the second supporting member can be engaged with the second concaved portion so as to sustain the supporting plate.

Further, each of the second supporting plate component has a locking hole for being fixed to the chairback by using a fixing element.

Hence, with the application of the present invention, the difficulty level of

dismantling and assembling the chairback and the chair base can be greatly lowered; a robust and brief structural design can be provided for prolonging the usage life of the structure connection and reducing the fabrication cost.

Brief Description of the Drawings

The foregoing aspects and many of the attendant advantages of this invention will become more readily appreciated as the same becomes better understood by reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is an explosive view schematically showing a conventional structure connection of motion chair.

Fig. 2 is an explosive view schematically showing a structure connection of motion chair of the present invention.

Fig. 3 illustrates a schematic assembly diagram of the structure connection of motion chair of the present invention.

Fig. 4 is a schematic structural diagram of a supporting plate of the present invention.

Detailed Description of the Preferred Embodiment

Referring to Fig. 2 and Fig. 3, Fig. 2 is an explosive view schematically showing a structure connection of motion chair of the present invention, and Fig. 3 illustrates a schematic assembly diagram of the structure connection of motion chair of the present invention. According to the present invention, a structure connection of motion chair is composed of a pair of supporting members 230, a pair of supporting members 240 and a pair of supporting plates 300, wherein the supporting members 230 are installed on both sides of a chairback 100, and the supporting members 240 are installed on both sides of the chairback 100, and the supporting plates 300 are installed on both sides of

a chair base 110. The supporting members 230 respectively located on both sides of the chairback 100 are the same in material and shape; the supporting members 240 respectively located on both sides of the chairback 100 are the same in material and shape; and the supporting plates 300 respectively located on both sides of the chair base 110 are the same in material and shape. Moreover, the positional relationships among the supporting members 230, the supporting members 240 and the supporting plates 300 are also the same. Therefore, for the sake of convenience, only one side of the chairback 100 and chair base 110 is explained in detail hereinafter.

The supporting member 240 is located below the supporting member 230, and the edges of the supporting plate 300 has a concaved portion 322 and a concaved portion 324, wherein the concaved portion 322 is corresponding to the supporting member 230, and the concaved portion 324 is corresponding to the supporting member 240. When the chairback 100 is assembled with the chair base 110, the supporting member 230 is engaged with the concaved portion 322, and the supporting member 240 is engaged with the concaved portion 324. Further, the supporting plate 300 has a locking hole 326, so that a fixing element 250 (for example: a screw) shown in Fig. 3 can be inserted through the locking hole 326 and a locking hole 236 of the chairback 100 so as to fix the supporting plate 300 to the chairback100.

Such as shown in Fig. 3, when a user sits on the assembled chairback 100 and chair base 110, the combined body of the chairback 100 and the chair base 110 has to stand the forces along the direction 400 and the direction 410, wherein the force along the direction 410 is resisted by the concaved portion 322 sustaining the supporting member 230, and the force along the direction 400 is resisted by the supporting member 240 holding the concaved portion 324. With the additional supporting force from the fixing elements 250, the structure connection of motion chair of the present

invention can be very sturdy.

The profile of the supporting plate 300 will be described in detail as follows.

Referring to Fig. 4, Fig. 4 is a schematic structural diagram of a supporting plate of the present invention. The supporting plate 300 of the present invention is composed of a supporting plate component 310 and a supporting plate component 320, wherein the supporting plate component 310 is connected to the supporting plate component 320. The supporting plate component 310 has a locking hole 312 and a locking hole 314 used for being fixed to the chair base 110. There is an angle A between the supporting plate component 310 and a side 315 of the supporting plate component 320, wherein the angle A is greater than 0 degrees and 180 degrees. The angle A is used to determine the extent of natural inclination for the chairback 100. The concaved portion 322 is located on one end (i.e. the top end of the supporting plate member 320) opposite to a connection side 317 between the supporting plate component 320 and the supporting plate component 310, and the concaved portion 324 is located on the position of a side 316 near the connection side 317, wherein the side 316 is opposite to the side 315.

It is worthy to be noted that the supporting member 230 and the supporting member 240 can be such as the structure of screw, and the material forming the supporting plate 300 of the present invention can be such as iron. However, the supporting members 230 and 240 can be any structure that can be engaged with the concaved portions 322 and 324, and the supporting plate 300 of the present invention can be formed with any material having high strength. Therefore, the present invention is not limited thereto.

Hence, the present invention is advantageously provided for greatly lowering the difficulty level of dismantling and assembling the chairback and the chair base;

providing a robust and brief structural design for prolonging the usage life of the structure connection and reducing the fabrication cost. Therefore, the present invention has highly industrial application value.

As is understood by a person skilled in the art, the foregoing preferred embodiments of the present invention are illustrated of the present invention rather than limiting of the present invention. It is intended to cover various modifications and similar arrangements included within the spirit and scope of the appended claims, the scope of which should be accorded the broadest interpretation so as to encompass all such modifications and similar structures.